

THE TOWER OF INFOBABEL: CYBERSPACE AS ALTERNATIVE UNIVERSE

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Fin-de-siècle capitalist culture is awash with prophecies of revolution. We are told that we are in the process of a transformation so profound that we can barely discern its implications. But this time the spectre is not that of revolution from below, but from outside, through the miraculous agency of that *deus ex machina*, technology. The Agricultural Revolution and the Industrial Revolution are now to be surpassed by the Information Revolution. The computer is transforming economy, society, culture, human beings themselves.

To the prophets, the digital futurologists of capitalism, this is not revolution as spectre at all, rather it is a beacon pointing the way forward. The future will be entirely different from the present, yet plus *ça* change, plus c'est la *même* chose: capitalism will be the engine of this transformation because it is capitalism that taps the wellsprings of technological change, capitalism that knows how to put technology to practical use and capitalism that can market the new technologies. Some capitalists will be thrown off by the great wheel of laissez *innover*, but those who learn to ride it will be rewarded with positions on the commanding heights of the new world.

Against this siren chorus of conservative revolutionaries there stands a smaller, less electronically articulate and less media-literate but equally enthusiastic, group of leftish prophets who see the seeds of social revolution in the new technologies. Democracy will spring not from the barrel of a gun but from the personal computer and modem. States and corporations will lose control over the flow of information. The People will rule the Internet.

Both camps are united at least on the principle that it is technology that is the autonomous engine of history. It is as if some cosmic dice are cast, and we await nervously, excitedly, to see if our number comes up. There is a third camp, not politically identifiable under traditional labels, that also shares this understanding of how the universe unfolds and our place at the table as spectators. But these are pessimists who think the results will be

bad, destroying jobs, displacing values, degrading society and stunting our culture.

Finally there is a fourth camp, also politically uncategorizable, that rejects the technological determinism of the others, derides the prevalent infohype, and argues that we can turn back the great wheel or at least stop it in its tracks, if we recognize the flimsiness and pretence of the prophecies. The Information Revolution is in their eyes no more than an incremental change in the way we do things, far from a qualitative leap into the unknown.

Given the extreme trendiness of so much discussion of this question, its breathless up-to-the-minute quality, it is something of a shock to discover that the most haunting image of the Information Age was penned some forty years ago by an Argentinian writer innocent of any interest whatever in the technology of the present or the future. This is Jorge Luis Borges' remarkable vision of the 'Library of Babel':

The universe (which others call the Library) is composed of an indefinite and perhaps infinite number of hexagonal galleries. . . . From any of the hexagons one can see, interminably, the upper and lower floors. The distribution of the galleries is invariable. Twenty shelves, five long shelves per side, cover all the sides except two; their height, which is the distance from floor to ceiling, scarcely exceeds that of a normal bookcase. One of the free sides leads to a narrow hallway which opens into another gallery, identical to the first and to all the rest. . . . Also through here passes a spiral stairway, which sinks abysmally and soars upward to remote distances. In the hallway there is a mirror which faithfully duplicates all appearances. . . . The Library is a sphere whose exact centre is any one of its hexagons and whose circumference is inaccessible.

Given the frenetic and feverish manner in which the information revolution is being hyped, it is worth pausing to ask just what is actually involved in this revolution. The initial answer is deceptively simple. Essentially there are two closely linked technological departure points: the computer and instantaneous communication systems. Both technologies have been developing in an exponential, explosive trajectory, but it is in the fusion of computing and communications (networks), that the truly revolutionary potential lies. Just as the capacity of the human mind to store, sort, retrieve and manipulate vast amounts of information is being enormously enhanced by means of ever-smaller, ever-faster and ever-more powerful microprocessors, the reach of individuals is being immeasurably extended through fibre optic cable and satellite communication to form 'real-time' networking of all computers.

This technological fusion has literally created a new world, a new space – cyberspace. Cyberspace exists nowhere and everywhere², it is a tabula *rasa* in the sense that it is constantly being constructed and reconstructed, written and rewritten, by the simultaneous interaction of all those networking in the medium. With Virtual Reality – which eventually will shed its present clumsy apparatus of goggles and gloves for something

more akin to **StarTrek's** Holodeck, an all-encompassing artificial interactive environment – cyberspace will actually become a lived space, with its own landscape and geography, into which people will 'move' and inside which they will 'act' (and be 'acted upon'). The discovery of such a new world, and more, a world that is apparently plastic, that can be moulded (closer to our heart's desire, unlike the intractable and often perverse real world?), is bound to bring out the **Faustian** in those who first glimpse its expansive, seemingly limitless, contours. They stand with wild surmise upon a peak in Darien.

With Faust, let us give the devil his due. The possibilities are endless, intoxicating. Space – old-fashioned physical space, distance – already shrunk by technologies like the telephone, is finally dissolved in cyberspace. People communicate with one another without regard to physical location: communities (systems of communication?) can transcend not only locality but the artificial constructs of the nation and political boundaries. New languages are born out of the new forms of communication, and with them, humanity reshapes its own **consciousness**.³

Already, not in some speculative future, but in the here and now, cyberspace is giving birth to new, 'artificial' life forms. In computer labs, programs have been designed to replicate particular environments (say, an 'ocean') and into these environments a 'species' (for instance, 'fish') has been introduced that is programmed to adapt to changing conditions. Generations pass and adaptations are made quite independent of the original program. The fish swim about, eat, reproduce and die in cyberspace. They are not 'real', they have no physical materiality, yet they behave just like 'real' fish, they interact with their environment, and they make something of themselves in the **process**.⁴ In the most recent Star Trek spinoff series, *Voyager*, there is a brilliant creation, the Emergency Medical Hologram, a computer program containing the most advanced medical knowledge projected holographically as a 'doctor' who must serve as the starship's chief medical officer in the absence of a human doctor. This hologram behaves remarkably like a human being when interacting with 'real' humans; he is self-conscious, he experiences anxiety, irritation, affection⁵ And why not? How does 'real life' differ from its 'artificial' replication in cyberspace, presuming only that the program is complex enough?

Of course, the Library is not really the 'Universe', its architecture is not the architecture of matter: It is an analogical 'universe'. Its shelves store information in the form of texts which contain 'data' that mirror or reproduce the material universe. Borges advances two axioms about the nature of the Library that he considers indisputable. The first is that it exists ab aeterno. The architecture of information is too complex and elegant to have been the product of man, the 'imperfect librarian'. Call it

God or Nature as you please, but remember that information is about something, it is not that thing itself: But this is easily obscured when the focus shifts to what is in the Library. Borges' second axiom is that 'The orthographical symbols are twenty-five in number' (the letters of the alphabet plus the period, comma and space). This has allowed the formulation of a General Theory of the library. All books are made up of the same elements, but in the 'vast Library there are no two identical books'. From these premises it may be deduced that the 'Library' is total and that its shelves register all the possible combinations of the twenty-odd orthographical symbols (a number which, though extremely vast, is not infinite). In other words, 'all that it is given to express, in all languages. Everything: the minutely detailed history of the future. . . .'

When it was proclaimed that the Library contained all books, the first impression was one of extravagant happiness. All men felt themselves to be the masters of an intact and secret treasure. There was no personal or world problem whose elegant solution did not exist in some hexagon. The universe was justified, the universe suddenly usurped the unlimited dimension of hope.'

Thus our own era of infohype, the unlimited promise of the great Internet (the embodiment of Borges' Library condensed into millions of individual computer screens as [W]indows into cyberspace, a 'sphere whose exact centre is any one of its hexagons and whose circumference is inaccessible'). These are no small matters. The devil's promises are enthralling, enchanting, alluring. No wonder so many have been drawn by the siren's song. But wait . . . cyberspace is not another universe into which we can escape via a magic doorway. Dream worlds exist in the minds of dreamers, who live in *this* world, breath air, eat food when hungry and drink water when thirsty - or not, depending upon their material circumstances. Cyberspace is a dreamed world, but the dreamers dream it through the mediation of computer hardware, fibre optic cable, complex telecommunications networks, and specific social and economic systems that support and deliver these technologies. Cybernauts are *wired*, in more ways than one. There is, or at least there should be, a *political economy* of cyberspace. Yes, even in the free-floating delirium of this new world, the old dismal science, like gravity, drags the cybernauts back toward earth.

Some uncomfortable but unavoidable facts: most of the people of the present real world not only lack computers but even lack access to telephones. To most of the world, the Information Revolution is not even a **rumour**. The IBM television ads that portray "solutions for a small planet" with cute clips of people in traditional and exotic settings discussing (with subtitles) various arcana relating to the latest IBM technologies perhaps tell us more about the imperial delusions of corporate power, or about the penetration by new products of Third World elites, than about any reality of 'solutions' for a 'small' planet. The Information Highway may be

REG WHITAKER

opening out like a vast autobahn across North America and Europe and the hyper-developed parts of Asia, but when it reaches into Africa and Latin America and the less developed parts of Asia, it reaches as narrow fingers into privileged islands; for much of the Third World, it simply stops short **altogether**.⁷ Nor is there any rational reason to think that the information revolution offers a magical solution to the endemic problems of poverty and underdevelopment. It is rather the latest name given to the enduring and ever deepening domination of the many poor by the wealthy few. Access to the Internet is as much use to a Bangladeshi peasant as hitching a ride on the Challenger space shuttle; but it is very useful to the multinational corporations that rule the global economic system that maintains Bangladesh as a ghetto of misery.

There are similar arguments against facile idealism applicable within Western societies. A reasonably up-to-date computer clone, pirated software, modem and monthly connect charge may not represent a huge investment. Yet it excludes a great many, as does the specific context of computer culture. The result is that the Information Highway has a decidedly middle-class look. Users tend as well to be disproportionately male, white, and the other familiar categories of privilege. Of course, over time these things may change. But just as with the case for Third World development, there are overheated notions afloat in political and bureaucratic circles (viz., the frenetic mind of Newt Gingrich) that a computer in every kitchen will somehow solve the problem of unemployment and regional economic decline. It is, of course, out of the question that right-wing neo-liberal politicians (who tend to be the ones that babble most about the transformative power of the computer) can devise and execute and pay for a vast public works scheme for actually putting the hardware and software required into the hands of the poor and the unemployed. Unfortunately, social democrats have been equally complicit, if less utopian, in talking up the computer as empowerment. Even the limited schemes undertaken by some social democratic governments to 'retrain' (a mantra of contemporary capitalist crisis) redundant fishermen with no fish stocks, coal miners with closed pits, or workers with skills tied to vanishing heavy industries, via the route of imparting 'computer skills' quickly disclose their derisory limitations. At best, these retrained workers hunching over their consoles have instantaneous access to the intelligence that no jobs are available. At least lining up outside the unemployment office provided some minimal human contact with others of like predicament, even if the end result is the same.

The attraction of neo-liberal politicians to infobabble has little to do with any notions of redistribution of wealth and power. The computer as 'empowerment' is a wonderfully ambiguous piece of rhetoric. This 'empowerment' offers a convenient and trendy rationale for further

slashing the public sector. Who needs armies of public sector workers to offer support services when former state clients have the opportunity to plug in directly? Who needs expensive capital investment in physical infrastructure and maintenance when services can be accessed on the Net? Right-wing politicians in North America who are tired of seeing tax dollars going to universities and colleges have started talking about the 'Virtual University', where courses are on offer to clients (formerly called students) receiving information designed by programmers (formerly called professors) and tapping in assignments and answering exam questions, without ever leaving their home computers. In the fullness of this vision, the entire support and maintenance staffs, most of the teaching staff and the administrative apparatus can be lopped off the public rolls, and the physical plant (formerly known as the campus) can be sold to the private sector for more productive and profitable use. This is a paradigm for other such schemes for a 'Virtual Public Sector' or the 'Virtual State'. Like Virtual Reality, users allow their senses to delude them into believing that they are somewhere they are not, that they are really doing things that are not happening at all. The opiate of the masses indeed.

There is an ideology among many of today's cybernauts, especially the Americans, that can best be described as frontier capitalism, or rugged individualism. The self-image is that of the lone frontiersman out there on the cutting edge of civilisation armed with his [the gendered pronoun is used advisedly] contemporary equivalent of the six-gun, the high-speed modem. It is expressed in a powerful aversion to the traditional enemy of the frontiersman, government and its attempts to regulate and domesticate his wild energies. Thus there have been ferocious reactions to the clumsy attempts of the Clinton administration to impose surveillance over the Internet, from the 'Clipper Chip' and the embargoing of exports of various encryption programmes; to the FBI's ham-handed attempt to enforce tapping of digital communication (and make the users pay for the privilege!); to censorship initiatives from various levels of government against cyberspace pornography and hate mail. These are probably reasonable responses under the circumstances, but they are also classic examples of navigating via the rear view mirror.

Neither individual free enterprise nor an aggressive interventionist state are particularly relevant to the new political economy of cyberspace. Hardware and software are produced by corporate giants like IBM and Microsoft, and the infrastructure of the Internet is currently a bone of contention between the telephone and media/cable giants. The real frontier is the commodification of information by capital. To shift metaphors, cyberspace is like the commons under attack from enclosures. The relentless emphasis in recent years on 'intellectual property' as a crucial element in international trade agreements points us clearly in the direction

that the so-called information revolution is travelling. The architecture of cyberspace may well look very much like the dark vision of William Gibson in his 1984 science fiction novel *Neuromancer* that first invented the very term 'cyberspace': vast mysterious collections of data looming like mega-fortresses fiercely guarded by giant corporations – while the 'real world' wallows in urban squalor, petty criminality, violence and tawdry escapism.

Information is a resource whose relation to late twentieth century capitalism is like that of oil to the capitalism of the early twentieth century. This is not to say, as some have unwisely extrapolated, that industrial capitalism is dead. Automobiles still provide the basic means of transportation for much of the world, and oil must still be tapped to feed the voracious appetite of automobiles for fuel. Information has not displaced older resources, just as postindustrialism has not displaced industrialism. But the computer and the new communications technologies have redefined how production and distribution take place. Mass production and mass consumption have, in the process of fulfilling their promise of growth, been transmuted. Production (including services) requires fewer workers and greater 'flexibility', and mass consumption of mass-marketed goods is increasingly matched by 'niche' marketing of specifically targeted production. On both sides of the equation, information and high-speed communication of that information is a crucial resource. The shift from the primary to the information-intensive services sector that is evident throughout the rich industrial nations is another indicator of this same change. Command over information and its transmission will be the key to success in the capitalist world of tomorrow.

The notion that this crucial resource will be allowed to become a public good is idealism at its most inane." Thus the cyberspace commons is enclosed as rapidly as its space expands. The advocates of 'electronic freedom' have their hearts in the right place but their heads in the sand. More apposite to the realities are the young freelance cyberpunk hackers who for their own fun and profit break into the dark corporate information towers that loom over the wired world. The first (anti)hero of the first cyberpunk novel was Gibson's Case, cyberspace cowboy who had made too many powerful enemies. Yet even these latter-day information highwaymen are themselves gobbled up by the very corporations they have successfully targeted: the electronic safe-crackers are hired on as smart high-tech security guards to keep out others (and, who knows, to crack their competitor's security as well?). Already we may be moving into a new era that leaves behind the individualistic hacking frontier: organized electronic warfare employing disciplined teams of corporate hackers setting about systematically to break into or to sabotage the data banks and operational software of economic competitors may become the order of the

day." Computer viruses, first transmitted by freelancers out of malice or just for the hell of it, will increasingly be **utilised** as weapons targeted at specific competitive information systems (the biological warfare of cyberspace, attacking the synapses of the enemy's information economy). This is a long way from the 'promise of the Internet', from the limitless vistas of information laid open to each and all who wish to browse its fields and pluck its free flowers of truth. Let us be blunt: this is a vision of **Never-Never-Land**, Lucy in the Sky with Diamonds.

We should consider carefully why the promise of the Internet is such a pleasing delusion. It is not because capitalists are evil persons, or because corporations are conspiring against the public interest (both propositions might be true, but still be beside the point). Information is a product. Raw, unprocessed data is not yet information – and even that requires someone to collect it in the first instance and store it in accessible form. Already there are claimants expecting compensation for their work. Processing data into a finished product useful to potential consumers is even greater value added. All this will be reflected in the final price. Only in the for-profit private sector are there the resources both to produce sophisticated information and to purchase the finished product on a commercially viable scale. Public sector information services were once fairly widely available on a free or relatively low-cost basis, but in this neo-liberal era, market principles of user-pay, cost recovery and servicing 'clients' have led to the virtual privatization of public sector information. Even those **once-privileged** bastions of state information secrecy, the security and intelligence agencies, are flogging their information services to the highest bidders in the private sector. Governments increasingly post free information on the Internet, but this is mainly for democratic legitimation of their **cost-recovery** supply to the private sector: the very fact that information is freely available is generally proof of its relatively low value as commodity.

Cyberspace will be a treasure trove of information only for those who already have treasuries to spend. For the rest of us, beneath the false promise of the Internet lies an overstuffed, cluttered, anarchically disorganized jumble of infotrash, so worthless that it has been discarded to lie along the sidewalks of the information highway for the casual use of anyone who cares to pick the odd item up. As time goes by, even this litter will be cleaned up and replaced by smaller business ventures selling baubles and beads: North American television viewers have already seen the future in the Shopping Channels.

Information is a valuable commodity, and it is power in the form of competitive advantage. But it is crucial to understand that information is power in a deeper sense. Ever since Foucault's *Surveiller et Punir: Naissance de la Prison* was published in 1975, we have been alerted to the importance of *surveillance* as a primary mechanism of social control in the

modern world. With Foucault, the Panopticon – Bentham's plan for a prison designed in such a way that each prisoner was under constant hidden surveillance, or what amounts to the same, would believe that he might be watched at all times – became the quintessential metaphor for a modern technology of power. Others have elaborated Foucault's insights into a concept of the 'surveillance society.'" This technology of power rests on the accumulation of coded information used to administer the activities of individuals about whom it is gathered. In contrast to earlier political forms, the modern state lays less stress on overt coercion to sustain its rule. Instead it favours pervasive, and penetrative administrative power, primarily through the collection, storage and retrieval of information within an administrative context of regulated definitions of tasks, functions and roles that situate individuals and groups in relation to other individuals and groups in an administrative or organizational framework. Under a surveillance regime, people disappear into abstract, bureaucratic categories: 'client', 'customer', 'taxpayer', 'functionary', 'law enforcement officer', 'supervisor', 'shop steward', 'teacher'. The routinized exercise of surveillance implies coercion, but overtly involves only the marshalling of information as a means of regulating behaviour.

The lineaments of the surveillance state have been apparent for a long time, but the explosive advances in computer and communication technologies provide a powerful and ever-expanding toolbox of surveillance. From the workplace to the streets to the home, people are being subjected to ever more sophisticated, ever more **specific**, ever more invasive, scrutiny. Although many of these technologies were initially developed through the military-industrial complexes, force-fed by the national security states during the eras of world war and cold war, they are now very much central elements of contemporary capitalism, in two main ways. First, corporations are enhancing their surveillance capacities to increase competitiveness, both in terms of the productive process and **marketing/distribution**. Second, surveillance is increasingly relied upon by capital in general to reduce risks and provide a more stable environment for doing business, both domestically and globally. Indeed, the privatization of surveillance has proceeded to the extent that it is perhaps more appropriate to talk about the surveillance society rather than the surveillance state. In effect, many of the aspects traditionally associated with the state's political rule – authoritative allocation of roles and regulation of behaviour, for example – are being quietly transferred to the private sector.

To look first at surveillance for competitiveness: fewer workers in more automated work environments are also more closely-watched workers. 'Smart-cards' permit controlled entry to workplaces and also allow supervisors to keep electronic track of where employees are at all times. Electronically encoded identification of tools and parts not only permit

better inventory control but also block employee pilfering. Increasing use of computers as an integral part of the productive process not only enhances efficiency but also provides a cumulative and precise record of the productivity of the employees operating them, as well as of the workers that the computers are tracking. None of this need be confined to individual workplaces: global corporations carry out global surveillance of operations and employees; managers are in constant electronic touch through E-Mail, teleconferencing, etc., and their performances closely monitored and evaluated.

When we turn to the marketing and distribution side, the scope of surveillance is equally impressive. Mass marketing – which still of course continues – is a very blunt instrument, a bit like the bombs dropped from air planes in World War II: a visual or radar sighting of the target area was made from thousands of feet in the air, the doors were opened, the bombs dumped, and the crew hoped for the best. Today's niche marketing is more like the military's contemporary smart weapons: the targeting is precise and the delivery is monitored and guided all the way to impact. The key to the new smart marketing is information. Consumers are identified not as mass, undifferentiated markets, but as subgroups with very specific information about purchasing patterns and purchasing power. Data banks on consumer preferences, with information gathered from myriad sources, can be cross-referenced and specific potential customers for specific products can be identified and targeted. Mass media move from broadcasting to 'narrowcasting': 500 channel television via direct broadcast satellites permits a proliferation of specialized programming with specific audiences whose particular buying preferences will be sensitively accommodated by the advertisers on those channels. Most of the data gathering goes on quite unnoticed by the targets, or is seen to be facilitating consumption. For instance, electronic checkouts at video rental shops speed up the process for customers. Few realize that information on each rental becomes part of a data profile of each customer's preferences in films."

Supply and distribution have been similarly revolutionized by the new technologies. Bar codes on products can provide instant readout of sales and inventories all the way to the factory door; readjustments and resupplies can be underway within seconds of consumer decisions recorded at checkout counters.

Surveillance as *risk aversion* moves the private sector closer to the traditional concerns of the state. Credit-worthiness is a crucial *entrée* into the consumer society. Anyone judged a credit risk can not hold a credit card, or borrow money for a house or car, and may even be barred from renting accommodation or transportation. Once named a credit risk, on the basis of data matching from private data banks, a process which allows little recourse for the targeted person to crosscheck the validity of the

sources of the negative information, an individual may find it very difficult to get off this electronic blacklist, leading to a downward spiral in personal economic circumstances. Insurance companies, basing decisions on data banks to which they have privileged, sometimes exclusive, access, can deny people access to insurance policies, or arbitrarily set rates at prohibitively high levels. In the case of automobile drivers in most jurisdictions, this may amount to effectively preventing someone from driving – and in many cases, from making a living. Even more ominous is the increasing use of screening for employment: drug testing, evidence of previous legal offences, medical problems, even lack of credit-worthiness, may be reason for denying employment or sacking an existing employee, often without appeal. Information upon which such significant decisions are made are based upon immediate access to vast data banks, many of them **privately**-held and controlled. Even in the case of public data banks, funded by taxpayer dollars, the subjects of the information may have little or no access to data on themselves, either because they are prohibited by law, or because only corporations with a high commercial stake can afford to pay for the added value of ordering the design of the data in forms accessible for their particular purposes. Again, in the case of public data banks, citizens often feel that these are actually helpful to them in their daily lives. For example, 'smart' health cards that encode personal medical information (blood type, allergies, medications, etc.) offer holders security that they will be properly handled in medical emergencies. Less obvious is that such cards may contain credit information about health insurance coverage that could lead to being turned away at hospital doors, or worse, medical information (a history of drug addiction, for instance, or having been tested positive for certain conditions such as HIV) that may have devastating consequences for the holder in various situations. DNA banks might seem to offer protection for peaceful citizens against criminals, but what of the (admittedly very small) chance of an innocent person's DNA sequencing matching that of an offender?

The Cold War national security state pioneered the process of security screening of broad categories of people: state employees; workers in defence and other industries of national significance; immigrants and citizenship applicants. The criteria were political: membership in the Communist party or in some other left-wing groups; association with known Communists, or past membership in alleged Communist 'front' organizations. The political prejudices of conservative politicians and police were given free reign under the purportedly impartial cover of security screening – as if this were like objective screening for a disease. It did not stop there. Homosexuality was targeted as an alleged character weakness that left persons vulnerable to blackmail and thus security risks. Rabid homophobia was never far from the surface, and has in the case of

the American and British military outlasted the Cold War that provided the ostensible rationale. There were many things going on in this process, many different fish being fried. But what was in common was the growth of data banks on citizens, first in the primitive and clumsy form of card indices and paper files, and then later in electronic form, in cyberspace. This was (and *is*, it still very much exists) a *shadow world*: it exists in the thick shadows of state secrecy, and its information shadows, or parallels, the real world. Owen Lattimore, the Asian scholar who was bizarrely persecuted by the Washington witch-hunters in the 1950s as a Soviet spy, said it best in his autobiography when he referred to the dossiers compiled on him by the FBI and congressional committees as the profile of a "*man who might have existed*."¹² There was a real Lattimore and then there was the Lattimore of the files who *might have* existed. And only the latter one mattered in the eyes of the powerful.

Today, in the time of the **Information** Revolution, we are all, in a sense, Owen Lattimores. The private and public data banks that form the **high**-security skyscrapers of cyberspace contain the shadow selves of almost every citizen and consumer. These data profiles, or shadow selves, in important ways *overshadow* our real selves." People who have protested bad credit ratings, for instance, have found that even simple cases of mistaken identity have been almost impossible to rectify. Just as the guardians of state security always argued that doubt must be resolved in favour of the state, never the individual, the powerful motive of risk aversion on the part of capital means that doubt is resolved in favour of the corporation. Corporations do not care if mistakes are made, or injustices perpetrated against individuals (except in the rare cases where sufficient bad publicity is generated that their public image suffers), because it does not *pay* to be attentive to such possibilities. They are in the business of avoiding risks on behalf of their shareholders; data profiles indicate risk categories and actions are taken to avoid anyone whose profile places them in the category. The result is a kind of social *triage*. Some are effectively excluded from full citizenship not in the state but in civil society.

Our cyberspace selves tend to overshadow our real selves for both good and bad reasons. Data banks mirror the real world but, necessarily, imperfectly. Just as a perfect scientific/mathematical model of the material universe – one that established a one-to-one relationship with reality – would be an absurdity, a theory as vast and complex as the actual universe, so too data profiles are always simplifications of reality. The key points are who asks the questions and sets the parameters of the data search, for what purposes. The answer of course is that those with wealth and power get to shape the questions and thus the kind of simplifications that emerge. Corporate data banks, and the public data banks to which corporations buy privileged access, are there to answer corporate questions. The simplified,

perhaps simplistic, data profiles are patterned to answer corporate needs. Real world selves are inveterately messy, maddeningly complex, irritatingly inconsistent, full of contradictions – in a word, difficult. That is what it means to be human, after all, and why we so often throw up our hands in personal relationships, write poems and novels and plays to contemplate the inexplicable, toil over biographies, and vainly try as social scientists to explain individual behaviour through metatheories of the collective. But our cyberspace shadow selves are not messy, not complex, not inconsistent, not contradictory: they are simple, easy constructs that can be quickly and cheaply drawn from the database and cost-efficiently used by the customers who pay for them. These cartoons crowd out the messy reality because the world of economic transactions is structured in such a way that only certain kinds of information can be fed into it. If you don't fit the programme, you will have to be cut down to size, or stretched, or whatever it takes. It's the Mad Hatter's Tea Party; if the mouse can't be stuffed into the teapot he will just have to be **excluded** – a risk.

*But this is, after all, the Library of Babel. The biblical Tower of Babel was an audacious attempt to build a direct link between earth and heaven. A jealous God cursed the architects and builders with a multiplicity of languages so that no-one could communicate with any other. The Tower fell and the languages were dispersed across the earth. So the extravagant happiness of the revolutionaries armed with the General Theory of the Library soon gives way to doubts, heresies, strife and despair as it becomes apparent that 'everything' includes nonsense, mistakes, even deceptions. One book consists of nothing but "the letters MCV, perversely repeated from the first line to the last." The era of **infohype** passes into the era of **infobabble**. 'Purifiers' are despatched through the endless halls to seek out and destroy false texts. There are struggles and librarians are murdered; others commit suicide.*

Seen in a sceptical light, cyberspace is not such an enthralling field of possibilities after all. It is a threatening terrain with dark towers of data brooding on the horizon, old-fashioned exploitations and conflicts transposed into new and disturbing forms, haunted by strange shadow distortions of our material **selves that** menace us in our daily lives. It is an *alienated* world where the products of our own invention and imagination come back to torment us.

This picture too is just a *possible* world, drawing on elements already present and extrapolating a plausible, if unpleasant, future. Like all possible worlds it will probably not come about exactly as pictured; it may indeed look quite different. Futurology is a treacherous endeavour, especially when premised upon the whims of that most illusive of **masters/mistresses**, technological innovation. But the bottom line of my argument is that any speculation that fails to take into account the thread

of continuity in terms of power and wealth will be seriously off the mark. The networked computer may change us in ways that can be both foreseen and yet unforeseen. It is unlikely to effect, by itself, a fundamental transformation in the political economic structure of the very system that gave rise to it, that marketed it, and enthusiastically incorporated it into its organizational strategy for competitive success. If real change is to come about, it will have to be because people make it happen, by learning to use the new technologies against their owners, not because a technological *deus ex machina* does it for them.

What then of the left-wing cyberenthusiasts and their prophecies of cyberspace as a democratic frontier? One must immediately qualify any response by granting that in authoritarian regimes, the new communication technologies can be liberating and empowering. The capacity of any repressive regime to shut out the outside world, to hold its subjects captive in mind as well as body has been rapidly eroded. The fax machine and E-Mail have indeed become revolutionary weapons in the hands of dissidents, and satellite television, for all that it symbolizes cultural imperialism and the penetration of traditional cultures by Western capitalist values, also destabilizes brutal regimes and police states. But when we turn to the so-called 'advanced' liberal democracies, the democratizing potential seems far less substantial.

Take the fashionable chatter about 'virtual communities' in cyberspace as new nodes of social resistance. Some have even spoken of Internet affinity groups as 'electronic *cafés*' like the European *cafés* of the early twentieth century where radical and revolutionary ideas and movements were spawned. But these 'virtual communities' are entirely lacking in the social and cultural context that could give rise to actual revolutionary movements. They are literally disembodied, disconnected from the social roots of their participants, floating in cyberspace without the identities that enable and drive people to carry out actual struggles against real enemies. People who communicate with one another only in cyberspace often mediate these communications through masks, false identities that they consciously adopt as **playful/deceptive** shields to protect their real **identities**.¹⁴ Some would have us believe that this represents a new evolving consciousness that transcends class, ethnicity, gender and national borders. It sounds more like escapist game-playing: *Nintendo players of the world unite, you have nothing to lose but your identities!* In any event, it is already a notorious fact that it is the Right, not the Left, that has made the most of the political opportunities of cyberspace, in many cases the ugliest elements of the Right, offering racism as political pornography on the Internet.

Another take on this is to **argue** that cyberspace eliminates from communication the hierarchical cues that infect face-to-face **communi-**

REG WHITAKER

cation. Women need not be silenced by domineering male voices, discussion can be colour-blind, etc. It is true that studies of the impact of E-Mail communication in multinational corporations suggest a slight weakening of hierarchical order, a certain limited democratization. Unfortunately, there is a downside to this democratization. Unable to effect genteel **putdowns** by the body language of status and privilege, or unable to catch the cues that would signal retreat and submission, participants resort to verbal violence: the phenomenon of '*flaming*' one's opponents. The democratic frontier turns out to be a Hobbesian frontier, the verbal war of all against all. The moral lesson? The fault, dear **Brutus**, is not in the stars. . . . An aggressive, competitive society is not transformed when beamed into cyberspace; rather cyberspace takes on some of the colouration of that society.

Does the Information Revolution offer an *alternative*? Yes and no. It does offer an alternative capitalist future, but it is unlikely, under present circumstances, to offer an alternative *to* capitalism. On the other hand, the profound impact of this revolution cannot be ignored by those seeking real alternatives. Cyberspace is a new reality, a spectre haunting the world. **As** some of the old terrains of struggle shrink, cyberspace expands as a new terrain to be studied, and to be acted upon. It is emphatically *not* itself an answer to problems that we ourselves must solve, with or without the aid of technology.

At the end – or is it the beginning (the Library is "unlimited and cyclical")- we are left with the great conundrum of the Library: by containing everything it contains nothing. Indeed, even if humanity were to extinguish itself, "the Library will endure: illuminated, solitary, infinite, perfectly motionless, useless, incorruptible, secret".

*In the Hitch Hiker's Guide to the Galaxy, the ultimate **computer**, 'Deep Thought', after cogitating for seven and a half million years, finally delivers the answer to the 'great Question of Life, the Universe and Everything'. The answer: 'forty-two'. When complaints are raised about how disappointing this is, Deep Thought suggests that the problem is in the question. But the question is . . . everything. "Exactly!" said Deep Thought. So once you do know what the question actually is, you'll know what the answer **means**.'*¹⁵

NOTES

1. Jorge Luis Borges, *Labyrinths: Selected Stories and Other Writings* (New York 1964) pp. 51–58.
2. See Julian Stallabrass, 'Empowering technology: the exploration of Cyberspace', *New Left Review* 211 (May/June 1995) pp. 3–32.
3. Mark Poster, *The Mode of Information: Poststructuralism and Social Context* (Cambridge 1990).
4. Claus Emmeche, *The Garden in the Machine: the Emerging Science of Artificial Life*

THE SOCIALIST REGISTER 1996

- (Princeton 1994). The virtual fish actually do exist, in a computer at the University of Toronto: see Stephen Strauss, 'Artificial Life', *The Globe and Mail* (Toronto) Sept. 10, 1994, p. D8.
5. The doctor thus represents one further step along the road pioneered by the earlier brilliant creation of *Star Trek: the Next Generation*, Data the android, who raises the same troubling questions about the alleged uniqueness of humanity.
 6. Actually **Borges** is mistaken: there *are* an infinite number of combinations of a limited number of characters. I am indebted to George Commel for pointing this out to me.
 7. A recent survey indicated there are about 3.4 million computers hooked up to the Internet in the United States (70% of the global total) and just over 500,000 in Western Europe. By contrast, Africa has just 27,100, Central and South America 16,000 and the Middle East 13,800. A report by a non-governmental foundation warned about a new form of poverty—"information poverty"—that threatens the developing world. "There is a danger of a new information elitism which excludes the majority of the world's population. . . .The technology could actually increase the gap between rich and poor." Mark John, "Third world faces "information poverty"-report", Reuters (London) Oct. 11, 1995. Even this survey may have missed the degree of domination of **the** Internet by US users: on its heels came another survey showing that the number of Americans who use computer on-line services shot up in the first half of 1995 to 12 million. 'On-line-services', AP (New York) Oct. 15, 1995.
 8. For an example of how vapid any discussion of these issues that avoids or ignores the underlying reality of capitalist ownership of information can be, see Anne Wells Branscomb, *Who Owns Information? From Privacy to Public Access* (NY 1994). After 185 pages of consideration of the question asked in her title, she concludes with breathtaking banality that "we [?] will build the kind of legal infostructure that we [?] want and need." (p. 186)
 9. At a recent conference on 'Infowar' an American electronic warfare specialist told of a bizarre plan by a group of American hackers, allegedly motivated by patriotic rage at French economic espionage against the US, to mount an "electronic assault on the main nerve centres of the French economy". Although apparently technically capable of inflicting considerable damage, the plan was called off when the FBI threatened them with arrest. 'Dawn of the **Infowar** era', *Intelligence Newsletter* 271 (14 September 1994) p. 1.
 10. Anthony Giddens, *The Nation-State and Violence* (Berkeley 1987); Christopher Dandeker, *Surveillance, Power and Modernity* (Cambridge 1990); Oscar H. Gandy, Jr., *The Panoptic Sort: a Political Economy of Personal Information* (Boulder, Colo. 1993); David Lyon, *The Electronic Eye: the Rise of Surveillance Society* (Minneapolis 1994).
 11. Republican Supreme Court nominee Robert Bork learned about this to his dismay when undergoing Senate confirmation a few years ago: enemies got hold of the information that he had in the past rented pornographic films.
 12. Owen Lattimore, *Ordeal by Slander* (Boston 1950) p. 28.
 13. Mark Poster was one of the first to point out the existence and some of the significance of this shadow world: *The Mode of Information*, *op. cit.*
 14. In Douglas (*Generation X*) Coupland's 1995 novel *Microserfs*, set among a group of **ex-Microsoft** 'techies' running their own software start-up in Silicon Valley, one character falls in love with an E-Mail correspondent in Waterloo, Ontario, whom he knows only by the address BARCODE, sex, age, etc. unspecified.
 15. Douglas Adams, *The Hitch Hiker's Guide to the Galaxy* (London 1979) p. 136.